



106101-144.ST25

#12

SEQUENCE LISTING

<110> Li, Zuomei
Bonfils, Claire
Besterman, Jeffrey

<120> Antisense Oligonucleotide Inhibition of Specific Histone
Deacetylase Isoforms

<130> 106101.144

<140> US 09/817,538

<141> 2001-03-26

<150> US 60/192,157

<151> 2000-03-24

<160> 33

<170> PatentIn version 3.1

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Arg Lys Met Glu Ile Tyr Arg Pro His Lys Ala Asn Ala Glu Glu Met
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Thr Lys Tyr His Ser Asp Asp Tyr Ile Lys Phe Leu Arg Ser Ile Arg
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Pro Asp Asn Met Ser Glu Tyr Ser Lys Gln Met Gln Arg Phe Asn Val
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Gly Glu Asp Cys Pro Val Phe Asp Gly Leu Phe Glu Phe Cys Gln Leu
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Ser Thr Gly Gly Ser Val Ala Ser Ala Val Lys Leu Asn Lys Gln Gln
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Thr Asp Ile Ala Val Asn Trp Ala Gly Gly Leu His His Ala Lys Lys
 130 135 140

Ser Glu Ala Ser Gly Phe Cys Tyr Val Asn Asp Ile Val Leu Ala Ile
 145 150 155 160

Leu Glu Leu Leu Lys Tyr His Gln Arg Val Leu Tyr Ile Asp Ile Asp
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Ile His His Gly Asp Gly Val Glu Glu Ala Phe Tyr Thr Thr Asp Arg
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Val Met Thr Val Ser Phe His Lys Tyr Gly Glu Tyr Phe Pro Gly Thr
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Gly Asp Leu Arg Asp Ile Gly Ala Gly Lys Gly Lys Tyr Tyr Ala Val
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Tyr Pro Leu Arg Asp Gly Ile Asp Asp Glu Ser Tyr Glu Ala Ile Phe
 225 230 235 240

Lys Pro Val Met Ser Lys Val Met Glu Met Phe Gln Pro Ser Ala Val
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Val Leu Gln Cys Gly Ser Asp Ser Leu Ser Gly Asp Arg Leu Gly Cys
 260 265 270

Phe Asn Leu Thr Ile Lys Gly His Ala Lys Cys Val Glu Phe Val Lys
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Ser Phe Asn Leu Pro Met Leu Met Leu Gly Gly Gly Gly Tyr Thr Ile
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Arg Asn Val Ala Arg Cys Trp Thr Tyr Glu Thr Ala Val Ala Leu Asp
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Thr Glu Ile Pro Asn Glu Leu Pro Tyr Asn Asp Tyr Phe Glu Tyr Phe
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Gly Pro Asp Phe Lys Leu His Ile Ser Pro Ser Asn Met Thr Asn Gln

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Asn Thr Asn Glu Tyr Leu Glu Lys Ile Lys Gln Arg Leu Phe Glu Asn
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Leu Arg Met Leu Pro His Ala Pro Gly Val Gln Met Gln Ala Ile Pro
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Glu Asp Ala Ile Pro Glu Glu Ser Gly Asp Glu Asp Glu Asp Asp Pro
 385 390 395 400

Asp Lys Arg Ile Ser Ile Cys Ser Ser Asp Lys Arg Ile Ala Cys Glu
 405 410 415

Glu Glu Phe Ser Asp Ser Glu Glu Gly Glu Gly Gly Arg Lys Asn
 420 425 430

Ser Ser Asn Phe Lys Lys Ala Lys Arg Val Lys Thr Glu Asp Glu Lys
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Glu Lys Asp Pro Glu Glu Lys Lys Glu Val Thr Glu Glu Glu Lys Thr
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 35 40 45

Gly Leu Tyr Arg Lys Met Glu Ile Tyr Arg Pro His Lys Ala Thr Ala
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Glu Glu Met Thr Lys Tyr His Ser Asp Glu Tyr Ile Lys Phe Leu Arg
 65 70 75 80

Ser Ile Arg Pro Asp Asn Met Ser Glu Tyr Ser Lys Gln Met His Ile
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Pro Phe Asn Val Gly Glu Asp Cys Pro Ala Phe Asp Gly Leu Phe Glu
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Phe Cys Gln Leu Ser Thr Gly Gly Ser Val Ala Gly Ala Val Lys Leu
 115 120 125

Asn Arg Gln Gln Thr Asp Met Ala Val Asn Trp Ala Gly Gly Leu His
 130 135 140

His Ala Lys Lys Tyr Glu Ala Ser Gly Phe Cys Tyr Val Asn Asp Ile
 145 150 155 160

Val Leu Ala Ile Leu Glu Leu Leu Lys Tyr His Gln Arg Val Leu Tyr
 165 170 175

Ile Asp Ile Asp Ile His His Arg Gly Asp Gly Val Glu Glu Ala Phe
 180 185 190

Tyr Thr Thr Asp Arg Val Met Thr Val Ser Phe Tyr Gly Glu Tyr Phe
 195 200 205

Pro Gly Thr Gly Asp Leu Arg Asp Ile Gly Ala Gly Lys Gly Lys Tyr
 210 215 220

Tyr Ala Val Asn Phe Pro Met Cys Asp Gly Ile Asp Asp Glu Ser Tyr
 225 230 235 240

Gly Gln Ile Phe Lys Pro Ile Ile Ser Lys Val Met Glu Met Tyr Gln
 245 250 255

Pro Ser Ala Val Val Leu Gln Cys Gly Ala Asp Ser Leu Ser Gly Asp
260 265 270

Arg Leu Gly Cys Phe Asn Leu Thr Val Lys Gly His Ala Lys Cys Val
275 280 285

Glu Val Val Lys Thr Phe Asn Leu Pro Leu Leu Met Leu Gly Gly Gly
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Gly Tyr Thr Ile Leu Arg Asn Val Ala Arg Cys Trp Thr Tyr Glu Thr
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Ala Val Ala Leu Asp Cys Glu Ile Pro Asn Glu Leu Pro Tyr Asn Asp
325 330 335

Tyr Phe Glu Tyr Phe Gly Pro Asp Phe Lys Leu His Ile Ser Pro Ser
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Asn Met Thr Asn Gln Asn Thr Pro Glu Tyr Met Glu Lys Ile Lys Gln
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Arg Leu Phe Glu Asn Leu Arg Met Leu Pro His Ala Pro Gly Val Gln
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Met Gln Ala Ile Pro Glu Asp Ala Val His Glu Asp Ser Gly Asp Glu
385 390 395 400

Asp Gly Glu Asp Pro Asp Lys Arg Ile Ser Ile Arg Ala Ser Asp Lys
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Arg Ile Ala Cys Asp Glu Glu Phe Ser Asp Ser Glu Asp Glu Gly Glu
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Gly Gly Arg Asn Val Ala Asp His Lys Lys Gly Ala Lys Ala Arg Ile
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Lys Pro Tyr Gln Ala Ser Gln His Asp Met Cys Arg Phe His Ser Glu
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Asp Tyr Ile Asp Phe Leu Gln Arg Val Ser Pro Thr Asn Met Gln Gly
 65 70 75 80

Phe Thr Lys Ser Leu Asn Ala Pro Asn Val Gly Asp Asp Cys Pro Val
 85 90 95

Phe Pro Gly Leu Phe Glu Phe Cys Ser Arg Tyr Thr Gly Ala Ser Leu
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Gln Gly Ala Thr Gln Leu Asn Asn Lys Ile Cys Asp Ile Ala Asn Trp
 115 120 125

Ala Gly Gly Leu His His Ala Lys Lys Phe Glu Ala Ser Gly Phe Cys
 130 135 140

Tyr Val Asn Asp Ile Val Ile Gly Ile Leu Glu Leu Leu Leu Lys Tyr
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His Pro Arg Val Leu Tyr Ile Asp Ile Asp Ile His His Gly Asp Gly
 165 170 175

Val Gln Glu Ala Phe Tyr Leu Thr Asp Arg Val Met Thr Val Ser Phe
 180 185 190

His Lys Tyr Gly Asn Tyr Phe Phe Pro Gly Thr Gly Asp Met Tyr Glu
 195 200 205

Val Gly Ala Glu Ser Gly Arg Tyr Tyr Cys Leu Asn Val Pro Leu Arg
 210 215 220

Asp Gly Ile Asp Asp Gln Ser Tyr Lys His Leu Phe Gln Pro Val Ile
 225 230 235 240

Asn Gln Val Val Asp Phe Tyr Gln Pro Thr Cys Ile Val Leu Gln Cys
 245 250 255

Gly Ala Asp Ser Leu Gly Cys Asp Arg Leu Gly Cys Phe Asn Leu Ser
 260 265 270

Ile Arg Gly His Cys Glu Cys Val Glu Tyr Val Lys Ser Phe Asn Ile
 275 280 285

Pro Pro Leu Leu Val Leu Gly Gly Gly Gly Tyr Thr Val Arg Asn Val
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Ala Arg Cys Trp Thr Tyr Glu Thr Ser Leu Leu Val Glu Glu Ala Ile
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Gln Tyr Leu Asp Gln Ile Arg Gln Thr Ile Phe Glu Asn Leu Lys Met
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Leu Asn His Ala Pro Ser Val Gln Ile His Asp Val Pro Ala Asp Leu
 370 375 380

Leu Thr Tyr Asp Arg Thr Asp Glu Ala Asp Ala Glu Glu Arg Gly Pro
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Val Ala Ser Thr Glu Val Lys Met Lys Leu Gln Glu Phe Val Leu Asn
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Lys Lys Lys Ala Leu Ala His Pro Asn Leu Asn His Cys Ile Ser Ser
 65 70 75 80

Cys Pro Arg Tyr Trp Tyr Gly Lys Thr Gln His Ser Ser Leu Asp Gln
 85 90 95

Ser Ser Pro Pro Gln Ser Gly Val Ser Thr Ser Tyr Asn His Pro Val
 100 105 110

Leu Gly Met Tyr Asp Ala Lys Asp Asp Phe Pro Leu Arg Lys Thr Ala
 115 120 125

Ser Glu Pro Asn Leu Lys Leu Arg Ser Arg Leu Lys Gln Lys Val Ala
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Thr Ala Leu Lys Lys Arg Pro Leu Asp Val Thr Asp Ser Ala Cys Ser
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Val Ser Ala Glu Asn Gly Ile Ala Pro Ala Val Pro Ser Ile Pro Ala
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Pro Leu Pro Leu Tyr Thr Ser Pro Ser Leu Pro Asn Ile Thr Leu Gly
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Gly Thr His Leu Thr Pro Tyr Leu Ser Thr Ser Pro Leu Glu Arg Asp
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Gly Gly Ala Ala His Ser Pro Leu Leu Gln His Met Val Leu Leu Glu
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Gln Pro Pro Ala Gln Ala Pro Leu Val Thr Gly Leu Gly Ala Leu Pro
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Leu His Ala Gln Ser Leu Val Gly Ala Asp Arg Val Ser Pro Ser Ile
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His Lys Leu Arg Gln His Arg Pro Leu Gly Arg Thr Gln Ser Ala Pro
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Leu Pro Gln Asn Ala Gln Ala Leu Gln His Leu Val Ile Gln Gln Gln
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His Gln Gln Phe Leu Glu Lys His Lys Gln Gln Phe Gln Gln Gln Gln
 370 375 380

Leu Gln Met Asn Lys Ile Ile Pro Lys Pro Ser Glu Pro Ala Arg Gln
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Pro Glu Ser His Pro Glu Glu Thr Glu Glu Glu Leu Arg Glu His Gln
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Ala Leu Leu Asp Glu Pro Tyr Leu Asp Arg Leu Pro Gly Gln Lys Glu
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Ala His Ala Gln Ala Gly Val Gln Val Lys Gln Glu Pro Ile Glu Ser
 435 440 445

Asp Glu Glu Glu Ala Glu Pro Pro Arg Glu Val Glu Pro Gly Gln Arg
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Gln Pro Ser Glu Gln Glu Leu Leu Phe Arg Gln Gln Ala Leu Leu Leu
 465 470 475 480

Glu Gln Gln Arg Ile His Gln Leu Arg Asn Tyr Gln Ala Ser Met Glu
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Ala Ala Gly Ile Pro Val Ser Phe Gly Gly His Arg Pro Leu Ser Arg

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His Ala Gly Arg Ile Gln Ser Ile Trp Ser Arg Leu Gln Glu Thr Gly		
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Leu Arg Gly Lys Cys Glu Cys Ile Arg Gly Arg Lys Ala Thr Leu Glu		
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Glu Leu Gln Thr Val His Ser Glu Ala His Thr Leu Leu Tyr Gly Thr		
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Asn Pro Leu Asn Arg Gln Lys Leu Asp Ser Lys Lys Leu Leu Gly Ser		
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Leu Ala Ser Val Phe Val Arg Leu Pro Cys Gly Gly Val Gly Val Asp		
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Cys Asp Ala Ser Glu Ala Cys Val Ser Ala Leu Leu Gly Asn Glu Leu
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Val Arg Ser Met Glu Lys Val Met Glu Ile His Ser Lys Tyr Trp Arg
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Leu Arg Ile Leu Ile Val Asp Trp Asp Val His His Gly Asn Gly Thr
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Gln His Met Phe Glu Asp Asp Pro Ser Val Leu Tyr Val Ser Leu His
660 665 670

Arg Tyr Asp His Gly Thr Phe Phe Pro Met Gly Asp Glu Gly Ala Ser
675 680 685

Ser Gln Ile Gly Arg Ala Ala Gly Thr Gly Phe Thr Val Asn Val Ala
690 695 700

Trp Asn Gly Pro Arg Met Gly Asp Ala Asp Tyr Leu Ala Ala Trp His
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 Arg Leu Val Leu Pro Ile Ala Tyr Glu Phe Asn Pro Glu Leu Val Leu
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 Val Ser Ala Gly Phe Asp Ala Ala Arg Gly Asp Pro Leu Gly Gly Cys
 740 745 750
 Gln Val Ser Pro Glu Gly Tyr Ala His Leu Thr His Leu Leu Met Gly
 755 760 765
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 Thr Ser Ile Ser Glu Ser Met Ala Ala Cys Thr Arg Ser Ile Leu Gly
 785 790 795 800
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 Ser Leu Arg Val Met Lys Val Glu Asp Arg Glu Gly Pro Ser Ser Ser
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 Lys Leu Val Thr Lys Lys Ala Pro Gln Pro Ala Lys Pro Arg Leu Ala
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 Glu Arg Met Thr Thr Arg Glu Lys Lys Val Leu Glu Ala Gly Met Gly
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 Lys Val Thr Ser Ala Ser Phe Gly Glu Glu Ser Thr Pro Gly Gln Thr
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Ile Gly Gly Ala Met Leu Gly Gln Thr Thr Ser Glu Glu Ala Val Gly
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Gly Ala Thr Pro Asp Gln Thr Thr Ser Glu Glu Thr Val Gly Gly Ala
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Ile Leu Asp Gln Thr Thr Ser Glu Asp Ala Val Gly Gly Ala Thr Ile
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Gly Gln Thr Thr Ser Glu Glu Ala Val Gly Gly Ala Thr Leu Ala Gln
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Ala Ser Ser Thr Asp His Gln Thr Pro Pro Thr Ser Pro Val Gln
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Gly Thr Thr Pro Gln Ile Ser Pro Ser Thr Leu Ile Gly Ser Leu
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Arg Thr Leu Glu Leu Gly Ser Glu Ser Gln Gly Ala Ser Glu Ser
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Gln Ala Pro Gly Glu Glu Asn Leu Leu Gly Glu Ala Ala Gly Gly
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Gln Asp Met Ala Asp Ser Met Leu Met Gln Gly Ser Arg Gly Leu
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Thr Asp Gln Ala Ile Phe Tyr Ala Val Thr Pro Leu Pro Trp Cys
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Pro His Leu Val Ala Val Cys Pro Ile Pro Ala Ala Gly Leu Asp
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Val Thr Gln Pro Cys Gly Asp Cys Gly Thr Ile Gln Glu Asn Trp
 1130 1135 1140

Val Cys Leu Ser Cys Tyr Gln Val Tyr Cys Gly Arg Tyr Ile Asn

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Tyr Val His His Gln Ala Leu Leu Asp Val Lys Asn Ile Ala His				
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<400> 13

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 35 40 45
 Ser Met Asp Thr Pro Met Pro Glu Leu Gln Val Gly Pro Gln Glu Gln
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 Glu Leu Arg Gln Leu Leu His Lys Asp Lys Ser Lys Arg Ser Ala Val
 65 70 75 80
 Ala Ser Ser Val Val Lys Gln Lys Leu Ala Glu Val Ile Leu Lys Lys
 85 90 95
 Gln Gln Ala Ala Leu Glu Arg Thr Val His Pro Asn Ser Pro Gly Ile
 100 105 110
 Pro Tyr Arg Thr Leu Glu Pro Ile Glu Thr Glu Gly Ala Thr Arg Ser
 115 120 125
 Met Leu Ser Ser Phe Leu Pro Pro Val Pro Ser Ile Pro Ser Asp Pro
 130 135 140
 Pro Glu His Phe Pro Leu Arg Lys Thr Val Ser Glu Pro Asn Leu Lys
 145 150 155 160
 Leu Arg Tyr Lys Pro Lys Lys Ser Leu Glu Arg Arg Lys Asn Pro Leu
 165 170 175
 Leu Arg Lys Glu Ser Ala Pro Pro Ser Leu Arg Arg Arg Pro Ala Glu
 180 185 190
 Thr Leu Gly Asp Ser Ser Pro Ser Ser Ser Ser Thr Pro Ala Ser Gly
 195 200 205
 Cys Ser Ser Pro Asn Asp Ser Glu His Gly Pro Asn Pro Ile Leu Gly
 210 215 220
 Asp Ser Asp Arg Arg Thr His Pro Thr Leu Gly Pro Arg Gly Pro Ile

225 230 235 240

Leu Gly Ser Pro His Thr Pro Leu Phe Leu Pro His Gly Leu Glu Pro
245 250 255

Glu Ala Gly Gly Cys Leu Pro Ser Arg Leu Gln Pro Ile Leu Leu Leu
260 265 270

Asp Pro Ser Gly Ser His Ala Pro Leu Leu Thr Val Pro Gly Leu Gly
275 280 285

Pro Leu Pro Phe His Phe Ala Gln Ser Ile Met Thr Thr Glu Arg Leu
290 295 300

Ser Gly Ser Gly Leu His Trp Pro Leu Ser Arg Thr Arg Ser Glu Pro
305 310 315 320

Leu Pro Pro Ser Ala Thr Ala Pro Pro Pro Gly Pro Met Gln Pro
325 330 335

Arg Leu Glu Gln Leu Lys Thr His Val Gln Val Ile Lys Arg Ser Ala
340 345 350

Lys Pro Ser Glu Lys Pro Arg Leu Arg Gln Ile Pro Ser Ala Glu Asp
355 360 365

Leu Glu Thr Asp Gly Gly Gly Pro Gly Gln Val Val Asp Asp Gly Leu
370 375 380

Glu His Arg Glu Leu Gly His Gly Gln Pro Glu Ala Arg Gly Pro Ala
385 390 395 400

Pro Leu Gln Gln His Pro Gln Val Ile Ile Trp Glu Gln Gln Arg Leu
405 410 415

Ala Gly Arg Leu Pro Arg Gly Ser Thr Gly Asp Cys Val Ile Leu Pro
420 425 430

Leu Ala Gln Gly Gly His Arg Pro Leu Ser Arg Ala Gln Ser Ser Pro
435 440 445

Ala Ala Pro Ala Ser Ile Ser Ala Pro Glu Pro Ala Ser Gln Ala Arg
450 455 460

Val Leu Ser Ser Ser Glu Thr Pro Ala Arg Thr Leu Pro Phe Leu Thr
 465 470 475 480

Gly Leu Ile Tyr Asp Ser Val Met Leu Lys His Gln Cys Ser Cys Gly
 485 490 495

Asp Asn Ser Arg His Pro Glu His Ala Gly Arg Ile Gln Ser Ile Trp
 500 505 510

Ser Arg Leu Gln Glu Arg Gly Leu Arg Ser Gln Cys Glu Cys Leu Arg
 515 520 525

Gly Arg Lys Ala Ser Ile Glu Glu Leu Gln Ser Val His Ser Glu Arg
 530 535 540

His Val Leu Leu Tyr Gly Thr Asn Pro Leu Ser Arg Leu Lys Leu Asp
 545 550 555 560

Asn Gly Lys Leu Ala Gly Ile Ile Ala Gln Arg Met Phe Glu Met Leu
 565 570 575

Pro Cys Gly Gly Val Gly Val Asp Thr Asp Thr Ile Trp Asn Glu Leu
 580 585 590

His Ser Ser Asn Ala Ala Arg Trp Ala Ala Gly Ser Val Thr Asp Leu
 595 600 605

Ala Phe Lys Val Ala Ser Arg Glu Leu Lys Asn Gly Phe Ala Val Val
 610 615 620

Arg Pro Pro Gly His His Ala Asp His Ser Thr Ala Met Gly Phe Cys
 625 630 635 640

Phe Phe Asn Ser Val Ala Ile Ala Cys Arg Gln Leu Gln Gln Gln Ser
 645 650 655

Lys Ala Ser Lys Ala Ser Lys Ile Leu Ile Val Asp Trp Asp Val His
 660 665 670

His Gly Asn Gly Thr Gln Gln Thr Phe Tyr Gln Asp Pro Ser Val Leu
 675 680 685

Tyr Ile Ser Leu His Arg His Asp Asp Gly Asn Phe Phe Pro Gly Ser
690 695 700

Gly Ala Val Asp Glu Val Gly Ala Gly Ser Gly Glu Gly Phe Asn Val
705 710 715 720

Asn Val Ala Trp Ala Gly Gly Leu Asp Pro Pro Met Gly Asp Pro Glu
725 730 735

Tyr Leu Ala Ala Phe Arg Ile Val Val Met Pro Ile Ala Arg Glu Phe
740 745 750

Ser Pro Asp Leu Val Leu Val Ser Ala Gly Phe Asp Ala Ala Glu Gly
755 760 765

His Pro Ala Pro Leu Gly Gly Tyr His Val Ser Ala Lys Cys Phe Gly
770 775 780

Tyr Met Thr Gln Gln Leu Met Asn Leu Ala Gly Gly Ala Val Val Leu
785 790 795 800

Ala Leu Glu Gly Gly His Asp Leu Thr Ala Ile Cys Asp Ala Ser Glu
805 810 815

Ala Cys Val Ala Ala Leu Leu Gly Asn Arg Val Asp Pro Leu Ser Glu
820 825 830

Glu Gly Trp Lys Gln Lys Pro Gln Pro Gln Cys His Pro Leu Ser Gly
835 840 845

Gly Arg Asp Pro Gly Ala Gln
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20           25           30

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Ala Leu His Lys Gln Met Arg Ile Val Lys Pro Lys Val Ala Ser Met
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Glu Glu Met Ala Thr Phe His Thr Asp Ala Tyr Leu Gln His Leu Gln
 65 70 75 80

Lys Val Ser Gln Glu Gly Asp Asp Asp His Pro Asp Ser Ile Glu Tyr
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Gly Leu Gly Tyr Asp Cys Pro Ala Thr Glu Gly Ile Phe Asp Tyr Ala
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Ala Ala Ile Gly Gly Ala Thr Ile Thr Ala Ala Gln Cys Leu Ile Asp
 115 120 125

Gly Met Cys Lys Val Ala Ile Asn Trp Ser Gly Gly Trp His His Ala
 130 135 140

Lys Lys Asp Glu Ala Ser Gly Phe Cys Tyr Leu Asn Asp Ala Val Leu
 145 150 155 160

Gly Ile Leu Arg Leu Arg Arg Lys Phe Glu Arg Ile Leu Tyr Val Asp
 165 170 175

Leu Asp Leu His His Gly Asp Gly Val Glu Asp Ala Phe Ser Phe Thr
 180 185 190

Ser Lys Val Met Thr Val Ser Leu His Lys Phe Ser Pro Gly Phe Phe
 195 200 205

Pro Gly Thr Gly Asp Val Ser Asp Val Gly Leu Gly Lys Gly Arg Tyr
 210 215 220

Tyr Ser Val Asn Val Pro Ile Gln Asp Gly Ile Gln Asp Glu Lys Tyr
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Tyr Gln Ile Cys Glu Ser Val Leu Lys Glu Val Tyr Gln Ala Phe Asn
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Pro Lys Ala Val Val Leu Gln Leu Gly Ala Asp Thr Ile Ala Gly Asp
 260 265 270

Pro Met Cys Ser Phe Asn Met Thr Pro Val Gly Ile Gly Lys Cys Leu
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Lys Tyr Ile Leu Gln Trp Gln Leu Ala Thr Leu Ile Leu Gly Gly Gly
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Gly Tyr Asn Leu Ala Asn Thr Ala Arg Cys Trp Thr Tyr Leu Thr Gly
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Val Ile Leu Gly Lys Thr Leu Ser Ser Glu Ile Pro Asp Asx Glu Phe
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Phe Thr Ala Tyr Gly Pro Asp Tyr Val Leu Glu Ile Thr Pro Ser Cys
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Arg Pro Asp Arg Asn Glu Pro His Arg Ile Gln Gln Ile Leu Asn Tyr
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Ile Lys Gly Asn Leu Lys His Val Val
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 herein "n" = any nucleotide.

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